

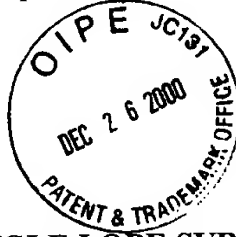
PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Dan Botez, James G. Lopez,
Gunawan Witjaksono

Date: December 22, 2000

Serial No.: 09/635,968



Docket No.: 032026:0471

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Group Art Unit: 2881

#6
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LHALLMAN

For: **SINGLE MODE, SINGLE LOBE SURFACE EMITTING DISTRIBUTED
FEEDBACK SEMICONDUCTOR LASER**

I hereby certify that this correspondence is being deposited with the United States
Postal Service as first class mail in an envelope addressed to: Commissioner for
Patents, Washington, D.C. 20231 on December 22, 2000.

Harry C. Engstrom

(Name of applicant, assignee
or Registered Representative)

(Signature)

December 22, 2000

(Date of Signature)

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
Patent and Trademark Office
Washington, D.C. 20231

Dear Sir:

With respect to the examination of the above-referenced application, the
applicants cite the following documents, copies of which are enclosed. These documents are
also listed on the accompanying Form PTO-1449.

UNITED STATES PATENTS

<u>Inventors</u>	<u>Patent No.</u>	<u>Issue Date</u>
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Akiba, et al.	4,796,274	January 3, 1989
Noda, et al.	4,847,844	July 11, 1989
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S. F. Yu, et al., "Effect of External Reflectors on Radiation Profile of Grating Coupled Surface Emitting Lasers," IEE Proceedings J. Optoelectronics, GB, Institution of Electrical Engineers, Stevenage, Vol. 140, No. 1, 1 February 1993, pp. 30-38.

James Lopez, et al., "Single-mode, single-lobe operation of surface-emitting, second-order distributed feedback lasers," Applied Physics Letters, AIP, USA, Vol. 75, No. 7, 16 August 1999, pp. 885-887.

James Lopez, et al., "Uniform near-field, symmetric-mode surface emission from complex-coupled 2nd-order distributed-feedback lasers," Conference Proceedings, Leos '97, 10th Annual Meeting, IEEE Lasers and Electro-Optics Society 1997 Annual Meeting, Vol.

1, pp. 9-10.

B. Xu, et al., "Grating Coupling for Intersubband Emission," *Applied Physics Letters*, US, American Institute of Physics, New York, Vol. 70, No. 19, 12 May 1997, pp. 2511-2513.

S. H. Macomber, "Nonlinear Analysis of Surface-Emitting Distributed Feedback Lasers," *IEEE Journal of Quantum Electronics*, Vol. 26, No. 12, December 1990, pp. 2065-2074.

Nils W. Carlson, et al., "Mode Discrimination in Distributed Feedback Grating Surface Emitting Lasers Containing a Buried Second-Order Grating," *IEEE Journal of Quantum Electronics*, Vol. 27, No. 6, June 1991, pp. 1746-1752.

Steven H. Macomber, et al., "Curved-Grating, Surface-Emitting DFB Lasers and Arrays," *Proc. SPIE*, Vol. 3001, No. 42, 1997, pp. 42-54.

James Lopez, et al., "Surface-emitting, distributed-feedback diode lasers with uniform near-field intensity profile," *Applied Physics Letters*, Vol. 73, No. 16, 19 October 1998, pp. 2266-2268.

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Charles H. Henry, et al., "Observation of Destructive Interference in the Radiation Loss of Second-Order Distributed Feedback Lasers," *IEEE J. of Quantum Electronics*, Vol. QE-21, No. 2, February 1985, pp. 151-153.

Roel G. Baets, et al., "On the Distinctive Features of Gain Coupled DFB Lasers and DFB Lasers with Second Order Grating," *IEEE J. of Quantum Electronics*, Vol. 29, No. 6, June 1993, pp. 1792-1798.

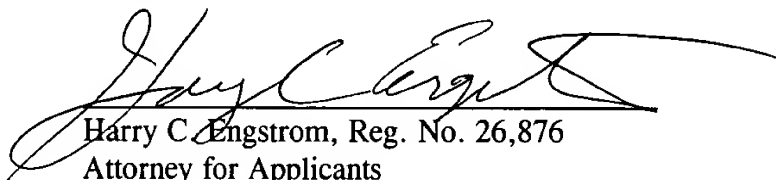
Klaus David, et al., "Basic Analysis of AR-Coated, Partly Gain-Coupled DFB Lasers: The Standing Wave Effect," IEEE J. of Quantum Electronics, Vol. QE-28, No. 2, February 1992, pp. 427-433.

Masoud Kasraian, et al., "Metal-grating-outcoupled, surface emitting distributed-feedback diode lasers," Appl. Phys. Lett., Vol. 69, No. 19, 4 November 1996, pp. 2795-2797.

REMARKS

The foregoing patents and other documents relate to distributed feedback semiconductor lasers and to surface emitting semiconductor lasers. Several of these documents were cited in the International Search Report issued November 22, 2000 by the European Patent Office on a Patent Cooperation Treaty application that corresponds to the above-referenced application. A copy of the Search Report is also enclosed. It is thus requested that these documents be considered during examination of the above-referenced application and be specifically made of record therein.

Respectfully submitted,



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